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ABSTRACT

This paper presents data on the racial segregation in public elementary schools in 60 cities for the 1967-68 school year. Periodic racial-ethnic surveys of public schools by the Office for Civil Rights were authorized under Title VI of the 1964 Civil Rights Act. A wide variation was found among school districts in the fundamental demographic constraints confronting school systems seeking to desegregate. The percentage Negro among students varied from less than five to more than 90 percent. Among instructional staff the percentage Negro ranges from a low of two percent to a high of 84. Levels of racial segregation estimated by the index of dissimilarity were typically high. The index ranged from a low of 39 in Sacramento to a high of 97 in Tulsa and Oklahoma City. The average level of school segregation among the 60 cities was 70. The task of desegregation for each city was estimated using an index that reflects both the degree of segregation and the racial composition of students. Cities in the South would have to let an average of 32 percent of their students shift schools compared to 26 percent in the North. Finally the segregation of students of one race from teachers of another was determined. Race of teachers in most school systems continues to be restricted mainly to that of their students. (Author/JM)

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This paper presents data on the racial segregation in public elementary schools in 60 cities for the 1967-68 school year. A wide variation was found among school districts in the fundamental demographic constraints confronting school systems seeking to desegregate. The percentage Negro among students varied from less than five to more than 90 percent. Among instructional staff the percentage Negro ranges from a low of two percent to a high of 84. Levels of racial segregation estimated by the index of dissimilarity were typically high. The index ranged from a low of 39 in Sacramento to a high of 97 in Tulsa and Oklahoma City. The average level of school segregation among the 60 cities was 79. The task of desegregation for each city was estimated using an index that reflects both the degree of segregation and the racial composition of students. Cities in the South would have to let an average of 32 percent of their students shift schools compared to 26 percent in the North. Finally the segregation of students of one race from teachers of another was determined. Race of teachers in most school systems continues to be restricted mainly to that of their students.

Over the years, an impressive body of research has documented the ill effects of segregated schooling on both Negro and white students. The Commission on Civil Rights summarized its findings in 1967:

> Negro children suffer serious harm when their education takes place in public schools which are racially segregated, whatever the source of such segregation may be. Negro children who attend predominantly Negro schools do not achieve as well as other children, Negro and white. Their aspirations are more restricted than those of other children and they do not have as much confidence that they can influence their own futures. When they become adults, they are less likely to participate in the mainstream of American society, and more likely to fear, dislike, and avoid white Americans.

Perhaps the Supreme Court put it most succinctly--segregation, it argued, "affects their hearts and minds in ways unlikely ever to be undone."[1]

Prior to 1954, cities in the United States were legally permitted to operate racially separate school systems so long as those systems were equal. In the South, this doctrine typically resulted in a "dual" school system--separate schools for Negroes and whites. This "separate but equal" doctrine came under increasing attack. In 1954 the Supreme Court ruled that segregated schools were "inherently unequal" and ordered desegregation "with all deliberate speed." Progress toward desegregation was extremely slow for more than a decade. In the last few years there has been considerable desegregation, spurred by new court decisions and application of the 1964 Civil Rights Act permitting cutting off federal funds to school districts that do not desegregate.

Indisputably, racial segregation in the nation's schools persists, but because there is little information on the extent and degree of school segregation, numerous claims and counter-claims are made. While defending the neighborhood school concept and disavowing bussing as a means for ending segregation, the current administration nonetheless

welcomes recent gains in school desegregation in the South, achieved largely by bussing. Another frequently-stated view is that

> ... there is no longer any objective difference between the school segregation in the North and South...the schools in the Northern cities, Boston, for example, are today as segregated as their Southern counterparts, Birmingham perhaps, and for the same reason.[2]

While in the past some authoritative studies provided excellent information about school segregation in particular cities,[3] it has been impossible to compare school segregation systematically in various cities in order to confirm or dispel the many speculations about its extent or causes. The Office for Civil Rights, under Title VI of the 1964 Civil Rights Act, was authorized to conduct periodic racial-ethnic surveys of public elementary and secondary schools. Results of the first such survey were published by the Office of Education, National Center for Educational Statistics, as Directory of Public Schools in Large Districts, With Enrollment and Instructional Staff, by Race: Fall, 1967. The survey collected data on the racial composition of the students and staff of individual schools in all school districts with 3,000 or more pupils, in addition to selected smaller districts in some Southern states. While similar data are now available for the 1968-69 school year and data for the 1970-71 school year will be available shortly, it is the 1967-68 data that are analyzed in this paper.

These data have been analyzed with the following aims: first, to describe the racial composition of the students and staff members in major school systems throughout the country; second, to measure the extent of racial segregation in the schools using techniques that have proven successful in the study of residential segregation; third, to assess the

demographic magnitude of the task facing a school district if it completely desegregates its schools; and fourth, to determine the segregation of students of one race from teachers of the other. We were particularly interested in determining whether it is possible to detect remnants of the major historical difference between the North and South--the existence of a dual system in the South in which Negro students were taught by Negro teachers in separate "Negro" schools, as contrasted with the "neighborhood" school system prevalent in the North in which school segregation was the result of segregated residential patterns.[4] As of Fall, 1967 few large school systems had been compelled by specific court order to desegregate. These data, then, represent a sort of baseline prior to the major desegregation efforts of the last three years.

THE DATA

Investigation was limited to the 60 cities with an enumerated population of 200,000 or more in 1970, 37 in the North and 23 in the South. The following schools were eliminated from the analysis: (1) schools with fewer than 100 students (they tend to be specialized schools); (2) schools for the mentally or physically handicapped; (3) schools for adults, such as night high school (but trade and technical high schools were retained in the analysis); (4) schools for which the data were incomplete owing either to misreporting or typographical errors (mainly a problem in Houston and New York City); and (5) no information was presented on parochial and private schools.

The analysis was conducted separately for elementary and secondary schools. In this paper we emphasize findings concerning elementary schools. Any school in which the grade span exclusively or chiefly included grades one to six was considered an elementary school, while all other schools

were classed as secondary. No attempt was made to separate junior from senior high schools or to isolate those schools which offered preschool classes. While the most common pattern of grade spans is K-6 in the elementary span, 7-9 in junior high, and 10-12 in senior high, many school systems have unique or varying patterns of grade spans. However, we believe this problem is not a significant factor in the present analysis.

For each public school in every school district, the survey tabulated the numbers of whites, Negroes, and others among students and instructional staff. The questionnaire stated that the "other" group

> ...should include any racial or national-origin group for which separate schools have been maintained in the past, and any racial or national-origin groups which are recognized as a significant "minority-group" in the community (such as Indian-American, Oriental, Eskimo, Mexican-American, Puerto Rican, Latin, Cuban, etc.)[5]

Responses were somewhat unpredictable: certain cities, such as Newark, reported large numbers of "others," while some cities, such as Baltimore and Houston, reported no "others." As a result, the data on "other" groups are of limited value, and the analysis is restricted to a comparison between Negroes and non-Negroes. Since the non-Negro group is principally Caucasian, we will use the term white when referring to it.

The instructional staff includes, in addition to classroom teachers and principals, supervisors of instruction, librarians, psychologists, and guidance personnel. It does not include noninstructional personnel such as nurses, food service, transportation and custodial workers. In most cases, the data refer to full-time staff members plus the full-time equivalent of part-time staff members.

The National Center for Educational Statistics acknowledged difficulties in selecting and processing the data. These data should be interpreted with some caution for they were published without extensive checks to

eliminate inaccuracies, inconsistencies or omissions. It is not known if all schools were listed for each school district; nor how consistent were procedures for determining the racial background of students and staff, or determining who was a staff member. One large city, Dallas, Texas, did not report any information.

The data refer to public school districts rather than "cities," since school district boundaries are not always coterminous with city boundaries. In some cases, the school district covers an entire county rather than conforming to municipal boundaries. This is true of all Florida districts, for example, and other county districts are noted in the tables.

CHARACTERISTICS OF PUBLIC ELEMENTARY SCHOOL SYSTEMS

As is evident from Table 1, there is a considerable diversity in the size and racial composition of the 60 elementary school districts. Districts range from fewer than 40 schools in Yonkers, Jersey City, San Jose, and Richmond, Virginia, to over 400 schools in New York, Chicago, and Los Angeles. The percentage Negro among students varies from less than five percent in El Paso and San Jose to more than 90 percent in Washington, D.C. Among instructional staffs, the percentage Negro ranges from a low of two percent in St. Paul, San Jose, and Tucson, to a high of 84 percent in Washington, D.C. Districts range from only a few hundred to over 100,000 Negro students, and from fewer than 100 Negro staff members to several thousand. Clearly, there is wide variation among districts in the fundamental demographic constraints confronting school systems seeking to desegregate.

The percentage Negro among elementary school students substantially exceeds the percentage Negro in the total city population, reflecting primarily high Negro fertility and racial differences in city-suburban migration patterns. While there is a strong relationship over cities between the percentage Negro among elementary school students and the city percentage Negro, this relationship is not perfect owing to city-to-city differences in the size and racial composition of private schools, the slippage between school district boundaries and municipal boundaries, and variations in racial composition by age.

Variation in average school size is shown in column 9 of Table 1. Elementary schools are smallest in Boston where less than 400 students on the average are enrolled and largest in Newark, Chicago, and New York, with an average of about 1,000 students per school. There is relatively little variation in the ratio of students to staff, ranging about 25 to 1 for most districts (data not shown).

Is it possible to find any "regional" differences in these demographic characteristics of school systems or are school systems throughout the country pretty much the same? Table 1 presents unweighted regional averages of the various characteristics. With regard to the racial composition of school systems, there is very little difference between the North and the South--the average percentage Negro among students being 30 and 36 respectively. This suggests that the demographic burden involved in desegregating schools has been largely equalized in the two regions. Granting that "the maximum problems of integration occur when the races are in the ratio of around 50:50,"[6] then a sizable number of

school systems in each region faces the school desegregation issue in its more unmanageable demographic dimensions.

The data on Negro staff do reveal remnants of the major historical differences between the North and South. When the percentage Negro among instructional staffs is compared with the percentage Negro among students in the South, it is found that the two percentages are similar, 32 and 36, both exceeding the population percentage Negro; in the North, the percentage Negro among staffs is much lower than that among students, 16 versus 30, and is lower than the population percentage Negro. A later section will explore the implications of this difference for the students of the two regions.

SEGREGATION IN PUBLIC ELEMENTARY SCHOOLS

A number of techniques can be used to assess the extent of school segregation in the 60 cities.[7] The government, both in its landmark 1965 study, Racial Isolation in the Public Schools, and in its more recent press releases dealing with changes in levels of school segregation, has relied almost exclusively on analysis of the "percentage of Negroes attending schools over 50 percent Negro" (or, occasionally, "over 90 percent Negro"). A serious shortcoming of this measure is that it is not independent of the city-wide percentage Negro, so that a heavily Negro school system will, other things being equal, appear to be more segregated than a school system with relatively few Negroes. For example, a city with a small Negro population could segregate its Negro students into a few racially mixed schools and place most white students into all-white schools, it could appear to be unsegregated by such a measure. Yet if Washington, D.C., with a student population that is 93 percent Negro, attained perfect racial balance in its schools it would appear to be perfectly segregated by this measure.

For this reason, we have chosen a measure, the index of dissimilarity, which takes as its standard of comparison the city-wide student percentage Negro and proceeds to measure the extent to which the schools in a district deviate from this percentage. Thus, complete integration prevails (0 on the index) if each school in the system has the same racial composition as the system as a whole; complete segregation (100 on the index) occurs if each school is exclusively Negro or non-Negro.[8]

This measure has long been used in sociological research, much of its use has been in studying the residential patterns of various race, ethnic, and occupation groups.[9] The index can be interpreted as the percentage of Negroes (or non-Negroes) who would have to be shifted among schools to achieve complete integration. The index is sensitive to the size of the units on which it is based, such that an index for a district with a very small average school size might be somewhat larger than it would be if the same district had a very large average school size. In this universe of cities, the relative homogeneity in average size of school makes this a minor factor that cannot account for the observed differences in index scores.

School segregation indexes for elementary students are displayed in column 2 of Table 2. Levels of racial segregation among elementary students were universally high in large United States cities in Fall, 1967. The range is from a low of 39 in Sacramento to a high of 97 in Tulsa and Oklahoma City. Two of the 60 cities have scores below 50; 42 have scores of 75 or above. The average level of school segregation among these 60 cities in Fall, 1967 is 79. A simple interpretation of a

score of 79 is that 79 percent of the Negro students would have to be moved to other schools to achieve complete integration.

School segregation in Fall, 1967 was greater in Southern than in Northern cities (87 versus 74). Only four of 37 Northern cities have indexes of 90 or above, while this is true of 12 of 23 Southern cities. Evidently, there is little justification for the assertion that school segregation in the North is as extensive as that in the South, at least prior to the legally imposed desegregation of the last three years.

Levels of school segregation are quite similar in magnitude to levels of residential segregation. One recent study presented residential segregation indexes, utilizing census tracts, for 13 cities which took special censuses in the mid-1960's.[10] Census tracts, like elementary school attendance districts, typically contain several thousand total population. Residential segregation scores for these cities averaged 75 while school segregation scores averaged 74.

Another study provides residential segregation indexes for all 60 cities analyzed in this paper, utilizing city block data for 1960. These indexes are presented in column 1 of Table 2. Comparing these indexes to our school segregation indexes, we find the school indexes average somewhat lower than the 1960 residential segregation indexes (79 versus 86), a difference which might well be due to the small unit of analysis (city blocks) used in the residential indexes. To what extent do school segregation patterns in these cities reflect residential segregation patterns? A definitive answer to this question would require population data for school areas for Fall, 1967, which simply are not available.[11] Granting the considerable slippage between the two sets of data--the possible lack of correspondence in school system and city boundaries, the

different dates of the data, the reliance on blocks rather than school areas, etc.--it is still instructive to examine the relationship between 1960 residential patterns and 1967 school segregation utilizing these data.

Figure 1 presents the scattergram showing the relationship between the two variables. A fairly strong relationship is indicated by a correlation of .80 for the 60 cities. The relationship is much stronger among Northern cities (.79) than among Southern cities (.57). That is, residential patterns are associated with nearly two-thirds of the variance in school patterns in the North, as compared to one-third in the South. This presumably reflects vestiges of the South's "dual" school system which, in large measure, was independent of neighborhood boundaries. (Residential segregation in 1960 was somewhat greater in Southern than in Northern cities.)

Our aim in this paper is descriptive rather than analytic, but the simple correlation of .80 for the 60 cities, presented in Figure 1, deserves attention in future work in this area. If desegregation proceeds apart from any changes in residential patterns, as the law would seem to require, then we might anticipate that this relationship would weaken in both regions, but perhaps more rapidly in the South where school desegregation is being pressed more assiduously. Indeed some Southern cities may dismantle their "dual" school systems without ever going through a strict "neighborhood school" stage such as characterizes the North. The forthcoming 1970 Census data should be instructive in this regard.

Although residential patterns affect the racial composition of students who attend a school, this is not so strongly the case with teachers. Any

segregation of staff members can more justifiably be laid to a school district's teacher assignment policy. Are Negro teachers segregated from non-Negro teachers, or do they tend to be distributed randomly throughout the system? Data bearing on this point are presented in column 3 of Table 2. Segregation of Negro from non-Negro staff members is, on the average, less pronounced than segregation of Negro students from non-Negro students in these 60 school systems (67 versus 79). Again, a strong regional difference is apparent. Within the South, racial segregation indexes for staff members are nearly as large as those for students (82 versus 87). Outside the South, school instructional staffs are more integrated than students (58 versus 74). This still means that in most Northern cities well over one-half the Negro (or white) staff members would have to change their teaching assignments to achieve complete staff integration, as compared to more than three-fourths in the South. The higher levels of teacher segregation observed in the South undoubtedly reflect the persistence of patterns established under the "dual" school system.

THE TASK OF SCHOOL DESEGREGATION

Recent federal court decisions have required many school districts to adopt desegregation plans which call for the shifting of students from one school to another. The index of dissimilarity offers one measure of the task which a school system faces if it is to become racially integrated--it indicates the percentage of Negro or white students who would have to be shifted to bring about integration. While moving students of only one race (usually Negroes) may seem unrealistic, it appears that desegregation in some areas has been approached in this way--closing Negro

schools, moving Negro students to previously white schools (but not vice versa), and releasing Negro teachers.[12]

Perhaps more realistic, or at least more efficient, is a model based upon an exchange of Negro and non-Negro students while maintaining the number and size of existing schools. This measure of the physical task confronting a school system embarking upon desegregation is termed the replacement index. The replacement index is defined as $2(B/T)(W/T)D$, where B/T is the proportion of all students who are Negro, W/T is the proportion who are non-Negro, and D is the index of dissimilarity. The index, which ranges from 0 to 50, indicates the minimum percentage of all students who would have to be shifted among schools to achieve integration. The value of the index is a function both of the degree of segregation in a school system and its racial composition. The index attains its maximum value, 50, in a school district which is 50 percent Negro and completely segregated ($D=100$). In such a school district, 50 percent of all students would have to be moved to effect complete integration.

Replacement indexes for students in these 60 school systems are presented in column 4 of Table 2. The magnitude of the desegregation task approaches its maximum in Southern cities such as Atlanta, Birmingham, and Memphis, and in Northern cities such as Chicago and Cleveland. These cities combine high levels of school segregation with a student body which is nearly 50 percent Negro. At the other extreme are cities that combine a lower level of segregation with a small percentage of Negro students. To desegregate elementary schools in El Paso, Corpus Christi, San Jose, Tucson, Sacramento, and St. Paul, fewer than 10 percent of their total students would have to be shifted among schools. On the average,

Southern cities face a slightly more difficult situation in desegregating their schools than do Northern cities--the average replacement index is 32 for the South compared to 26 for the North. The South has both higher average levels of segregation and a racial composition slightly less favorable from the viewpoint of integrating schools.

Highly segregated school systems, such as exist in these 60 cities, can be integrated relatively easily if they have a favorable racial composition, i.e., a predominantly Negro system (Washington, D.C.) or a predominantly non-Negro system (Des Moines and St. Paul). Under complete integration, of course, the schools in Des Moines and St. Paul would have overwhelmingly white student enrollments, while those in Washington would be predominantly Negro. If integration were defined differently, or if interest were directed to metropolitan areas rather than cities, another index would be required.

Under a policy of exhanging black and white students, the minimum number of students who would have to be shifted to achieve integration is obtained by multiplying the replacement index by the total number of students. Likewise, if we multiply the index of dissimilarity by the number of Negro students in a district, we obtain the number of Negro students who would have to be shifted to achieve the same goal if all white students remain in their current schools. These numbers may be roughly translated into numbers of busses, costs of integration, and the like. These figures, presented in columns 6 and 7 of Table 2, indicate that it is, in a sense, more "efficient" for school systems to achieve integration by moving students of only one race--the minority race--rather than the more democratic alternative of exchanging Negroes and whites among schools. Exchanging Negro and white students involves shifting more

students than does moving only minority students, although in practice the latter requires closing some schools and enlarging others.

School systems have been under pressure to integrate their staffs as well as their students. Column 5 of Table 2 presents replacement indexes for the instructional staffs of the 60 school systems. The task of integrating teachers is somewhat easier than that of integrating students--the replacement index averages 20 for teachers as compared to 29 for students in these 60 cities. Because of the substantial regional differences in teacher segregation and teacher racial composition, the magnitude of the teacher desegregation task is much greater in the South than in the North. The average replacement index for teachers in Southern cities is 30 compared to an average of 13 among Northern cities. In Atlanta, Birmingham, Memphis, and New Orleans, nearly 50 percent of all teachers would have to be reassigned to integrate the instructional staffs. In these cities, teachers are highly segregated and the composition of the schools' staffs is approximately 50 percent Negro. In a fair number of Northern cities, on the other hand, it would be necessary to move only a small fraction of the teachers to produce integration. In these systems, Negroes comprise a very small percentage of the teaching staffs. All of these measures are based on instructional staffs as currently constituted. Most school districts would face a very different task if integration of instructional staffs were defined to require that white and Negro teachers be represented in accord with the racial composition of the student body or the working-age population of the city.

SEGREGATION BETWEEN STUDENTS AND TEACHERS

The analysis to this point has demonstrated a high level of segregation between Negro and white students, and a moderately high level of segregation

between Negro and white teachers. The data presented thus far do not bear directly on the question of the degree to which Negro teachers are teaching Negro students and white teachers are teaching white students.

Segregation indexes are presented in Table 3 for the four combinations of Negro and white teachers and Negro and white students--i.e., Negro teachers versus Negro students, Negro teachers versus white students, white teachers versus white students, and white teachers versus Negro students. Each index is a measure of the dissimilarity in the distribution of two groups among schools. Our expectation is that segregation between Negro teachers and Negro students and between white students and white teachers will be relatively low, while the remaining two indexes will be relatively high. The indexes confirm our expectation that teachers are mostly restricted to students of their own race.

The smallest segregation indexes are those which compare the distributions of white students and white teachers, while the largest are those which compare the distributions of white students and Negro teachers. Regional differences are obvious. Continuing the tradition of dual schools, black children in the South are taught almost exclusively by black teachers and white pupils by white teachers. In Northern cities there are proportionally fewer Negro staff members and many Negro students have white teachers. In the North as in the South few black teachers are assigned to schools with predominantly white enrollments. As a result of these policies, there is less mixing of students of one race with teachers of another in the South than in the North.

SEGREGATION IN PUBLIC SECONDARY SCHOOLS

We carried out a parallel analysis with data for secondary schools (including junior high schools) in these 60 cities. In general, the degree of segregation was somewhat less in the secondary schools of both the South and North. We believe this is because secondary school attendance districts cover larger areas--areas which are more likely to include some residents of both races. Because of the lower segregation, the task of integrating secondary schools would require proportionally less shifting of pupils or teachers. Still, in most of these large cities many thousands of secondary students would have to be transferred to effect integration.

SUMMARY AND IMPLICATIONS

We have demonstrated the prevalence of racial segregation of pupils and teachers in public schools of the nation's large cities in Fall, 1970. Schools in both the South and the North have not been desegregated "with all deliberate speed." Thirteen years after the Brown decision all large cities operated school systems that in the words of the Supreme Court were "inherently unequal." While these general conclusions are already widely accepted on the basis of less adequate measures and systematic journalism, this is the first time it has been possible to provide systematic documentation with national data and an acceptable statistic for comparing cities.

In the four years since these data were collected a number of large cities launched desegregation programs. We presented estimates for each city of the task of desegregation, utilizing an index that reflects both the degree of segregation and the racial composition of students. These replacement indexes and the associated estimates of the number of students to be shifted provide numerical guides to the minimal size of the task of

achieving perfect racial homogeneity in each city's schools. In view of the complexity of instituting this type of social change, these measures cannot be taken as perfect guides to the desegregation programs of specific cities. Most desegregation plans seek to reduce variance among schools in racial composition, not to eliminate such variance. Actual desegregation plans must confront problems of practical utilization of school buildings, of reasonable bus routes and transportation times, of simultaneous educational innovations (middle schools, educational parks, etc.), and of other activities designed to secure greater public acceptance (or perhaps simply to secure the appearance of compliance with a federal administrative or court order).

The standard against which we measured the degree of segregation is that each school should have the racial composition that prevails in the city's public school system. This standard is the most obvious one and the one that is most often used. Yet, it is not the most appropriate from all perspectives. Consider the indexes of staff segregation for Northern cities. The average percentage Negro among teaching staff in these cities is 16. To obtain a zero segregation score the average Northern city had 16 percent black staff in each school. Such a measure ignores the contrast between the figure of 16 percent for staff and that of 30 percent for students. Some school reformers might wish to impose additional conditions beyond those taken into account in our measure. They might wish to compare the percentage of black staff to the percentage of black students or to the percentage of blacks among the city's adult residents. Others might argue for retaining black teachers for as many black students as possible.

The list of other factors that might be taken into account in measuring school segregation or designing desegregation programs is endless. We will call attention to a few that are particularly relevant from a demographic and policy perspective.

The nonpublic schools in most cities enroll sizable members of white pupils but few blacks. An analysis embracing the total school system, public and private, would be appropriate for certain purposes. Another expansion of the system of reference would be to treat each metropolitan area as a single educational universe. From the standpoints of human ecology, urban sociology, and urban economics, the metropolis is functionally more relevant than the central city. Treating the metropolis as a system of unrelated municipalities may frustrate desegregation efforts. Thus desegregation of schools in a large city without considering the suburbs may accelerate white movement to the suburbs where the percentage black is extremely low. Some extreme examples drawn from school enrollment data for Fall, 1968; Glendale, California, 25,000 students of whom 4 were Negroes; Dearborn, Michigan, 22,000 students of whom 2 were Negroes; Levittown, New York, 17,000 students of whom 4 were Negroes.[13] Both municipal boundaries and school system boundaries are subject to state regulation. Indeed metropolitan school segregation has become a subject of litigation and a metropolitan perspective is likely to become more common in school planning.

The correlation we found between residential segregation and school segregation is not subject to a simple causal interpretation. Residential decisions are affected by the character of nearby schools, and the formulation of school attendance rules is an administrative process that is carried out with knowledge of residential patterns. This reciprocal process is

reinforced by a variety of related decisions on zoning, code enforcement, provision of municipal services, annexation, school bussing, and other local services. Any attempt to desegregate schools must take account of continuing pervasive residential segregation. The degree of desegregation possible without altering school attendance policies is slight. Simple redrawing of attendance districts (within the structure of a walk-to-school system) is an annual occurrence in most cities to accommodate demographic shifts but is of limited potential as a desegregation device. The utility of redrawing boundaries is further diminished by the ease with which subsequent residential changes can obliterate any desegregation effects. Desegregation of schools in large cities cannot be accomplished without transportation of students. Statements favoring desegregation but apparently rejecting bussing as a means to this end seem contradictory and tantamount to preserving a racially segregated school system.[14]

The Office of Education followed up the 1967 survey of racial composition of schools with similar surveys Fall, 1968[13] and Fall 1970. The latter data have not yet been released in detail but will document substantial changes in school segregation in many cities. In the face of such rapid change in racial makeup of schools, there is an accompanying possibility of rapid residential shifts conducive to reducing the white percentage in large cities and resegregating schools within the metropolis. It is important that similar surveys be undertaken annually and released promptly. To do so would be to capture a rare opportunity to monitor and analyze a major social change as it occurs.

References and Notes

[1]U.S. Commission on Civil Rights, Racial Isolation in the Public Schools, Vol. I (1967), p. 193.

[2]Capital Times, Madison (Wis.), 1 February 1971 (Washington Post-Capital Times News Service).

[3]See 1, chap. 2; R. Crain, The Politics of School Desegregation (Chicago Aldine, 1968); T. Edwards and F. Wirt, eds., School Desegregation in the North (San Francisco: Chandler, 1967); A. Stinchcombe, M. McDill, and D. Walker, American Journal of Sociology 74, 221 (1968).

[4]The government, in some of its releases, has confined its attention to the 11 states of the Old Confederacy, while in actuality several "Northern" cities maintained school segregation by law until 1954, notably Baltimore, Washington, St. Louis, Kansas City, Wichita, and Wilmington, Delaware. (See 1, p. 6.) The 11 states of the Old Confederacy are Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. We use the census definition of the South, including in addition to these 11 states Delaware, District of Columbia, Maryland, Oklahoma, and West Virginia.

[5]U.S. Office of Education, Directory, Public Elementary and Secondary Schools in Large School Districts with Enrollment and Instructional Staff by Race, Fall, 1967, p. 839.

[6]A. Stinchcombe, M. McDill, and D. Walker, American Journal of Sociology 74, 221 (1968), p. 228.

[7]K. Taeuber and A. Taeuber, Negroes in Cities (Chicago: Aldine, 1965), Appendix A; O. Duncan and B. Duncan, American Sociological Review 20 (1955).

[8]Calculation of the index of dissimilarity requires only information on the numbers of Negroes and non-Negroes in each schcol in a city. The index is based upon a comparison between the percentage distribution of Negroes across all schools in the city and the similar distribution for non-Negroes. The index equals one-half the sum of the absolute differences between these two percentage distributions. In algebraic terms, if school i contains b_i Negroes and w_i non-Negroes and if the entire school system contains B Negroes and W non-Negroes, the index equals $1/2 \sum_i |b_i/B - w_i/W|$. The value of this index indicates the minimum percentage of Negroes (or non-Negroes) who would have to change their schools in order to obtain an equal proportion of Negroes and non-Negroes in each school.

[9]O. Duncan and B. Duncan, The Negro Population of Chicago (Chicago: University of Chicago Press, 1957); S. Lieberson, Ethnic Patterns in American Cities (New York: Free Press of Glencoe, 1963); K. Taeuber and A. Taeuber, Negroes in Cities (Chicago: Aldine, 1965); O. Duncan and B. Duncan, American Journal of Sociology 60 (1955).

[10]R. Farley and K. Taeuber, Science 159, 953 (1968). Generally speaking, the smaller the size of the areal unit used in computing the index of dissimilarity, the greater the value of the index. Thus, indexes computed using city block data exceed those computed using census tract figures. In the present case, census tracts seem to be the preferred unit, since elementary school enrollment areas and census tracts appear to encompass roughly equal-sized areas in many cities.

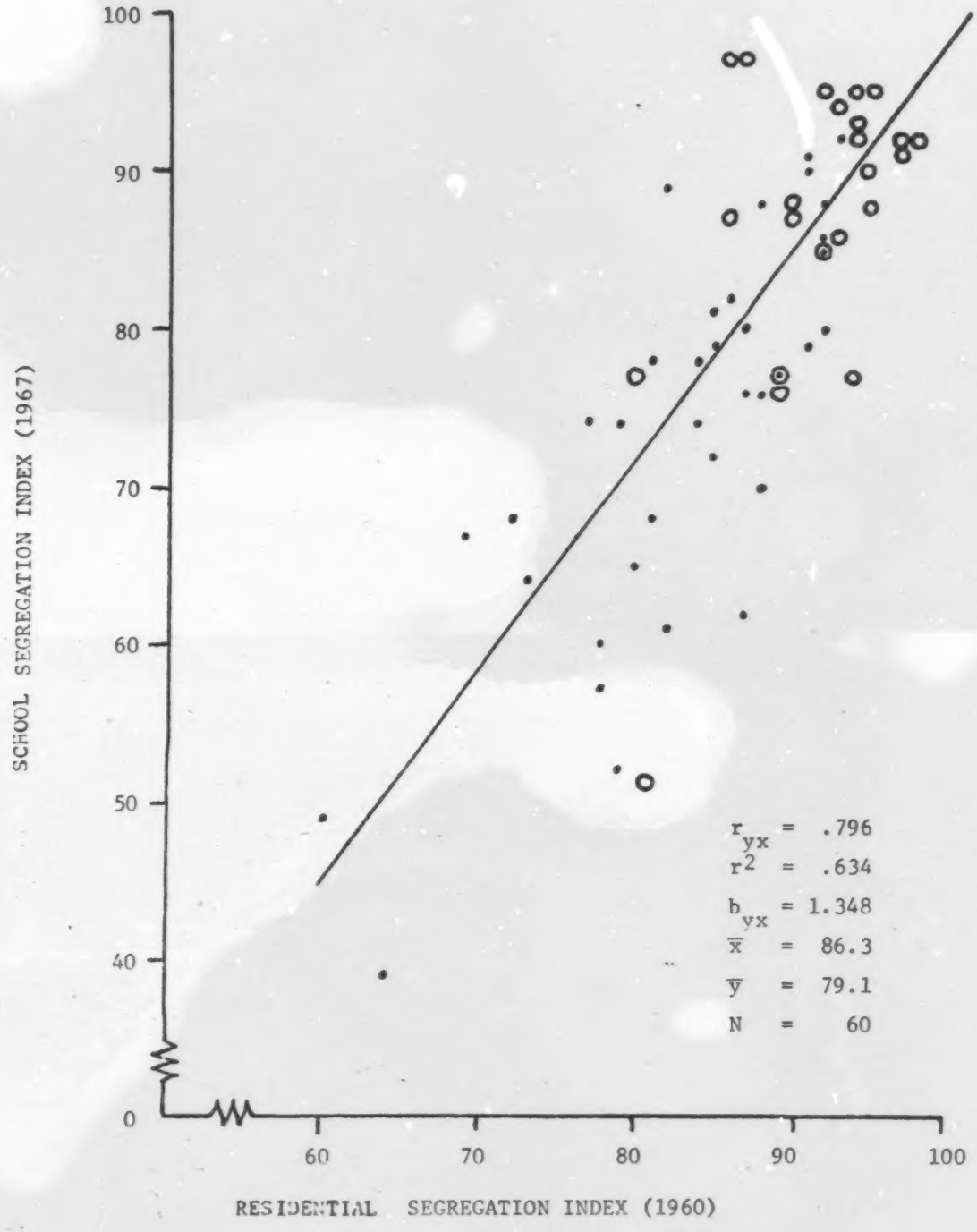
[11]In the 1970 Census, for the first time cities were given the option of obtaining demographic data for areas other than the usual city blocks and census tracts. Some cities requested such data for school enrollment areas, but these data are not yet available.

[12]New York Times, 18 March, 3 April, and 5 April 1971.

[13]U.S. Department of Health, Education and Welfare, Office for Civil Rights, Directory of Public Elementary and Secondary Schools in Selected Districts with Enrollment and Staff by Racial/Ethnic Groups, Fall, 1968.

[14]President Nixon, New York Times, 12 August 1971

FIGURE 1 -- SCHOOL AND RESIDENTIAL SEGREGATION INDEXES FOR SIXTY CITIES



o - Southern Cities
• - Northern Cities

TABLE 1

CHARACTERISTICS OF ELEMENTARY PUBLIC SCHOOL SYSTEMS IN SELECTED CITIES--FALL, 1967

School District	NUMBER OF:					PERCENT NEGRO			Average Size of School
		Students (000)		Staff (000)					
	Schools	Total	Negro	Total	Negro	City Pop[a]	Students	Staff	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
SOUTH									
Atlanta	123	75.0	44.8	3.1	1.8	51%	60%	56%	610
Austin	48	27.3	4.6	1.3	.2	12	17	18	570
Baltimore	149	123.6	80.0	4.5	2.6	46	65	58	830
Birmingham	85	48.8	25.3	1.6	.8	42	52	50	570
Charlotte[b]	77	43.9	13.0	1.9	.5	24	30	28	570
Corpus Christi	41	24.3	1.4	1.0	<.1	5	6	4	590
El Paso	50	41.2	1.3	1.9	.1	3	3	3	820
Fort Worth	88	47.5	12.6	1.9	.4	20	27	23	540
Houston	159	144.2	48.2	5.3	1.8	26	33	33	910
Jacksonville[b]	99	68.0	19.1	2.7	.8	22	28	29	690
Louisville	48	33.9	15.9	1.3	.5	24	47	35	710
Memphis	91	72.9	37.0	2.8	1.2	39	51	43	800
Miami[b]	155	118.8	32.8	5.1	1.2	15	28	23	770
Nashville[b]	101	54.3	14.3	2.2	.5	20	26	23	540
New Orleans	93	67.7	47.3	2.6	1.4	45	70	55	730
Norfolk	53	31.6	12.2	1.3	.5	28	39	37	600
Oklahoma City	88	43.4	10.1	1.6	.3	14	23	19	490
Richmond	39	29.3	20.2	1.3	.8	42	69	63	750
St. Petersburg[b]	73	39.4	6.6	1.6	.2	8	17	14	540
San Antonio	75	43.1	6.7	1.7	.2	8	16	14	580
Tampa	85	51.9	11.6	2.0	.3	14	22	16	610
Tulsa	74	45.1	5.8	1.7	.2	11	13	12	610
Washington, D.C.	139	95.0	88.3	3.7	3.1	71	93	84	680

TABLE 1--Continued

School District	NUMBER OF:					PERCENT NEGRO			Average Size of School
		Students (000)		Staff (000)					
	Schools (1)	Total (2)	Negro (3)	Total (4)	Negro (5)	City Pop[a] (6)	Students (7)	Staff (8)	(9)
NORTH									
Akron	51	35.7	9.6	1.4	.1	18%	27%	10%	700
Boston	157	57.9	18.0	2.7	.2	16	31	7	370
Buffalo	73	45.8	16.8	2.3	.2	20	37	11	630
Chicago	416	407.1	214.5	14.7	5.0	33	53	34	980
Cincinnati	76	55.1	23.2	2.0	.5	28	42	27	730
Cleveland	138	90.1	51.6	3.4	1.6	38	57	46	650
Columbus	121	67.4	17.9	2.5	.4	19	27	15	560
Dayton	53	40.6	15.4	1.8	.5	31	38	31	770
Denver	89	54.1	8.3	2.3	.2	9	15	9	610
Des Moines	59	26.9	2.2	1.0	.1	6	8	3	460
Detroit	212	185.6	107.5	6.8	2.5	44	58	37	880
Indianapolis	105	78.8	25.6	2.7	.7	18	33	27	750
Jersey City	31	27.9	12.7	1.1	.2	21	46	16	900
Kansas City	80	46.7	21.8	1.8	.6	22	47	32	580
Long Beach	55	39.6	3.6	1.5	.1	5	9	4	720
Los Angeles	434	372.4	89.6	13.5	2.3	18	24	17	860
Milwaukee	123	78.5	21.8	2.4	.4	15	28	16	640
Minneapolis	73	42.1	3.2	1.7	.1	4	8	4	580
Newark	51	55.4	40.3	2.5	.8	54	73	31	1090
New York City	595	584.4	187.5	29.7	2.7	21	32	9	980
Oakland	64	37.8	20.7	1.6	.3	35	55	20	590
Omaha	67	34.2	6.9	1.1	.1	10	20	9	510
Philadelphia	209	173.3	102.9	7.3	2.5	34	59	35	830
Pittsburgh	87	48.7	19.6	1.9	.2	20	40	12	560
Portland, Ore.	93	53.7	4.8	2.2	.1	6	9	3	580
Rochester	42	28.0	8.6	1.4	.1	17	31	9	670
Sacramento	56	29.5	4.2	1.1	.1	11	14	6	530

TABLE 1--Continued

School District	NUMBER OF:					PERCENT NEGRO			Average Size of School
		Students(000)		Staff(000)					
	Schools (1)	Total (2)	Negro (3)	Total (4)	Negro (5)	City Pop[a] (6)	Students (7)	Staff (8)	(9)
St. Louis	150	91.2	59.7	3.2	1.9	41	66	59	610
St. Paul	60	26.4	1.6	1.0	<.1	4	6	2	440
San Diego	116	74.6	9.5	2.8	.1	8	13	4	640
San Francisco	93	51.7	15.1	2.0	.2	13	29	8	560
San Jose	34	20.3	.3	.7	<.1	3	2	2	600
Seattle	86	51.3	6.0	2.1	.1	7	12	5	600
Toledo	56	40.1	10.7	1.5	.3	14	27	20	720
Tucson	53	27.5	1.7	1.2	<.1	4	6	2	520
Wichita	91	40.1	5.6	1.9	.1	10	14	8	440
Yonkers	29	18.0	2.3	.7	<.1	6	13	6	620
REGIONAL AVERAGES									
South	88	59.6	24.3	2.4	.8	26%	36%	32%	660
North	118	87.5	31.7	3.6	.7	18	30	16	660

Source: U.S. National Center for Educational Statistics, Directory, Public Elementary and Secondary Schools in Large Districts with Enrollment and Instructional Staff by Race, Fall, 1967.

U.S. Bureau of the Census, Census of Population: 1970, PC(V2).

[a]Figures for the city population refer to 1970.

[b]Data for these places refer to the county rather than the central city.

TABLE 2

SEGREGATION INDEXES AND REPLACEMENT INDEXES FOR ELEMENTARY PUBLIC SCHOOL SYSTEMS IN SELECTED CITIES: FALL, 1967

School District	SEGREGATION INDEXES			REPLACEMENT INDEXES		NUMBER OF STUDENTS TO BE SHIFTED (000)	
	Residential[a] (1)	Students (2)	Staff (3)	Students (4)	Staff (5)	Both Races[b] (6)	Minority Race[c] (7)
SOUTH							
Atlanta	94	95	94	46	46	34.3	28.7[e]
Austin	93	86	71	24	21	6.6	4.0
Baltimore	90	87	70	40	34	49.1	37.9[e]
Birmingham	93	94	99	47	49	23.0	22.2[e]
Charlotte[d]	94	77	79	32	32	14.0	10.0
Corpus Christi	89	77	66	8	4	2.0	1.1
El Paso	81	51	68	3	4	1.3	.7
Fort Worth	94	93	92	36	33	17.2	11.7
Houston	94	92	88	41	39	59.3	44.5
Jacksonville[d]	97	92	96	37	39	25.3	17.6
Louisville	89	76	69	38	32	12.8	12.1
Memphis	92	95	92	48	45	34.7	34.2[e]
Miami[d]	98	92	75	37	27	43.7	30.2
Nashville[d]	92	85	84	33	29	17.9	12.1
New Orleans	86	87	97	36	48	24.6	17.6[e]
Norfolk	95	90	77	43	36	13.6	11.0
Oklahoma City	87	97	86	35	26	15.1	9.8
Richmond	95	95	89	41	41	12.0	8.7[e]
St. Petersburg[d]	97	91	92	25	23	10.0	6.0
San Antonio	90	88	77	23	18	10.0	5.9
Tampa[d]	95	88	91	31	25	15.9	10.2
Tulsa	86	97	83	22	17	9.8	5.6
Washington, D.C.	80	77	55	10	15	9.6	5.2[e]

TABLE 2--Continued

School District	SEGREGATION INDEXES			REPLACEMENT INDEXES		NUMBER OF STUDENTS TO BE SHIFTED (000)	
	Residential[a] (1)	Students (2)	Staff (3)	Students (4)	Staff (5)	Both Races[b] (6)	Minority Race[c] (7)
NORTH							
Akron	88	70	40	28	7	9.9	6.8
Boston	84	74	57	32	7	18.2	13.2
Buffalo	87	80	42	37	8	17.1	13.5
Chicago	93	92	72	46	32	187.3	177.6[e]
Cincinnati	89	77	51	38	20	20.7	17.9
Cleveland	91	90	64	44	32	39.6	34.6[e]
Columbus	85	81	58	32	15	21.4	14.6
Dayton	91	90	78	42	34	17.2	13.8
Denver	86	82	52	21	9	11.5	6.8
Des Moines	88	76	63	11	3	3.1	1.7
Detroit	85	79	43	39	20	71.6	61.9[e]
Indianapolis	92	85	82	37	32	29.4	21.8
Jersey City	78	57	37	28	10	7.9	7.2
Kansas City	91	79	68	39	29	18.4	17.2
Long Beach	84	78	54	13	4	5.1	2.8
Los Angeles	82	89	66	33	19	121.8	80.1
Milwaukee	88	88	68	35	18	27.6	19.1
Minneapolis	79	74	53	10	4	4.4	2.4
Newark	72	68	32	27	14	15.0	10.3[e]
New York City	79	52	48	23	8	133.2	98.1
Oakland	73	64	39	32	13	12.0	10.9[e]
Omaha	92	88	79	28	13	9.6	6.0
Philadelphia	87	76	42	37	19	63.8	53.6[e]
Pittsburgh	85	72	55	35	12	16.8	14.1
Portland, Ore.	77	74	68	12	4	6.4	3.5
Rochester	82	61	44	26	7	7.2	5.2
Sacramento	64	39	41	10	4	2.8	1.6

TABLE 2--Continued

School District	SEGREGATION INDEXES			REPLACEMENT INDEXES		NUMBER OF STUDENTS TO BE SHIFTED (000)	
	Residential[a] (1)	Students (2)	Staff (3)	Students (4)	Staff (5)	Both Races[b] (6)	Minority Race[c] (7)
St. Louis	91	91	83	41	40	37.5	28.7[e]
St. Paul	87	62	68	7	3	1.9	1.0
San Diego	81	78	58	17	5	12.9	7.4
San Francisco	69	67	40	28	6	14.4	10.2
San Jose	60	49	75	1	2	.3	.1
Seattle	80	65	52	13	5	6.9	3.9
Toledo	92	80	71	31	22	12.6	8.6
Tucson	81	68	77	8	3	2.2	1.2
Wichita	92	86	70	21	10	8.3	4.8
Yonkers	78	60	38	13	4	2.4	1.4
REGIONAL AVERAGES							
South	91	87	82	32	30	20.1	15.1
North	83	74	58	26	13	27.0	21.2

Source: K. E. and A. F. Taeuber, Negroes in Cities (Chicago; Aldine, 1965), Table 1.

U.S. National Center for Educational Statistics, Directory, Public Elementary and Secondary Schools in Large Districts with Enrollment and Instructional Staff by Race, Fall, 1967.

[a]Residential segregation indexes refer to 1960.

[b]Obtained by multiplying replacement index (col. 4) by total number of students (col. 2 of Table 1).

[c]Obtained by multiplying student segregation index (col. 2) by number of Negro students (col. 3 of Table 1). In cities with a minority of white students, the number of white students was used. See note e.

[d]School data for these places refer to entire county. Residential segregation indexes, in all cases, refer to central cities.

[e]In these cities Negroes are the majority group in elementary schools. The figures indicate the minimum number of white students who would have to be shifted.

TABLE 3

SEGREGATION INDEXES BETWEEN STUDENTS AND TEACHERS FOR ELEMENTARY PUBLIC SCHOOL SYSTEMS IN SELECTED CITIES: FALL, 1967

School District	SEGREGATION INDEXES			
	White Students versus White Teachers	Negro Students versus Negro Teachers	Negro Students versus White Teachers	White Students versus Negro Teachers
	(1)	(2)	(3)	(4)
SOUTH				
Atlanta	11	8	91	96
Austin	8	14	82	74
Baltimore	22	15	69	84
Birmingham	4	6	94	99
Charlotte	8	17	74	81
Corpus Christi	5	27	75	68
El Paso	5	68	51	67
Fort Worth	8	10	89	94
Houston	10	16	87	89
Jacksonville	6	12	92	96
Louisville	16	16	63	79
Memphis	13	11	85	97
Miami	12	17	81	84
Nashville	8	19	78	88
New Orleans	19	17	83	99
Norfolk	11	13	80	85
Oklahoma City	10	20	89	93
Richmond	17	5	87	96
St. Petersburg	7	21	86	93
San Antonio	7	28	84	78
Tampa	9	31	80	95
Tulsa	9	19	92	87
Washington, D.C.	42	7	51	78
NORTH				
Akron	19	27	53	56
Boston	28	35	47	78
Buffalo	29	23	54	68
Chicago	29	20	67	92
Cincinnati	25	20	55	70
Cleveland	25	12	68	85
Columbus	18	27	65	74
Dayton	13	15	78	87
Denver	15	37	70	62
Des Moines	12	66	67	62
Detroit	32	17	48	71
Indianapolis	10	19	78	86

(continued)

TABLE 3 (Continued)

School District	SEGREGATION INDEXES			
	White Students versus White Teachers	Negro Students versus Negro Teachers	Negro Students versus White Teachers	White Students versus Negro Teachers
	(1)	(2)	(3)	(4)
NORTH				
Jersey City	24	27	35	50
Kansas City	18	21	64	81
Long Beach	10	33	71	60
Los Angeles	14	25	76	77
Milwaukee	17	16	72	84
Minneapolis	9	44	67	59
Newark	45	21	26	65
New York City	20	31	36	61
Oakland	32	20	33	67
Omaha	18	30	71	93
Philadelphia	38	18	42	73
Pittsburgh	27	28	46	75
Portland, Ore.	10	39	65	75
Rochester	22	25	41	62
Sacramento	9	33	32	45
St. Louis	17	9	80	94
St. Paul	8	73	59	69
San Diego	16	40	68	65
San Francisco	20	28	48	56
San Jose	4	67	47	73
Seattle	10	39	56	58
Toledo	11	18	71	78
Tucson	8	54	62	81
Wichita	10	29	78	78
Yonkers	10	50	54	40
REGIONAL AVERAGE				
South	12	18	80	87
North	18	31	58	71

Source: U. S. National Center for Educational Statistics. Directory, Public Elementary and Secondary Schools in Large Districts with Enrollment and Instructional Staff by Race, Fall, 1967.